

Recommendations for Aseptic Technique and Post-Operative Care for Rodent Surgery

It is the responsibility of the veterinary staff, investigator, laboratory animal technicians, and the facility manager to ensure that all personnel performing the procedures outlined in this document are properly trained in the correct technique and that anesthesia, post-operative pain medication and care are provided to the animals.

Procedures

A. Animal Preparation

1. Rodents should be anesthetized according to Animal Study Proposal.
2. Once the toe pinch response is lost, anesthetic depth is sufficient for surgery; the animal's ears and feet, and mucous membranes of the eyes and nose should be pink indicating adequate oxygenation.
3. If the animal's eyes are open, artificial tears ointment should be applied for protection and lubrication.
4. The hair over the surgical site should be clipped using a #40 clipper blade taking care not to cut the skin.
5. The surgical site should be wiped with Betadine, Chlorhexidine, or another approved antiseptic solution and then wiped with 70% ethyl alcohol.
6. The rodent should be carefully placed onto a warm surface and positioned for surgery.

B. Surgeon Preparation

1. Scrubs, and personal protective equipment, (as dictated by the facility requirements and including a mask), should be donned by the surgeon.
2. Hands should be scrubbed thoroughly with antibacterial soap and disposable gloves should be worn.

C. Surgical Instruments

1. Between animals, the instruments should be cleaned of particulate matter and placed in a scientifically acceptable disinfectant solution or a glass bead instrument sterilizer. The instruments should be wiped dry prior to use. If a hot bead sterilizer is used, allow adequate time for the instruments to cool before use.
2. After all surgeries are completed, the instruments should be thoroughly cleaned prior to packing for the autoclave.

D. Surgical Procedure

1. Surgical drapes should be used where possible, but are not required.
2. Absorbable suture material or electrocautery should be used to control bleeding.
3. When the ventral abdominal cavity is opened, the abdominal lining, (peritoneum), and muscle layer should be closed with one or two absorbable sutures. The skin should be closed separately.
4. Nine mm autoclips should be used for closure of the skin.

E. Analgesia and Postoperative Care

1. Analgesia should be administered for major surgery, (surgery that penetrates or exposes a body cavity).
2. Analgesia should be outlined in the animal study proposal. Examples include:
 - A. Local analgesia with 1-3 drops [1 drop for each centimeter of the incision size] of 0.25% bupivacaine dripped onto the incision at the time of closure
 - B. Systemic analgesia with Tylenol, (300 mg/kg per os), provided in the drinking water or a Jell-O supplement
 - C. Systemic analgesia with injectable agents such as buprenorphine, (0.05-0.5 mg/kg subcutaneously every 8 hours)
3. Contact the veterinary staff for additional information on analgesics and dosages.
4. When surgery is completed the rodent should be moved to a warm draft free location. A heat source should be used to keep the animal warm. The animal should be monitored for excessive body temperature during this period. Care must be taken when using a heat lamp as they can produce extremely high temperatures and ocular damage.
5. The animal should be observed until it is awake enough to maintain itself in a sternal/upright position, and then it should be returned to a clean cage.
6. All post-surgical animals should be observed daily for 5 days following surgery for any signs of illness or infection of the incision.
7. Autoclips should be removed in 7 to 14 days depending on how quickly the incision heals. Absorbable suture material is not removed.
8. The veterinary staff should be consulted on any animal that does not seem to be recovering well, exhibits signs of pain or distress, or develops redness, swelling, heat, or discharge at the incision site.

Questions concerning this guideline should be addressed to the veterinary staff, facility management, or technical staff